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INFORMATION REPORT INFORMATION REPORT

CENTRAL INTELLIGENCE AGENCY

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COUNTRY Poland

REPORT

SUBJECT Lenin Steel Works in Nowa Huta.

DATE DISTR.

20 MAY 1958

*History, organization, administration
of works: production data, security,
description of processes, processing
methods, sketch of works.*

NO. PAGES

20

REFERENCES

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DATE OF
INFO.

PLACE &
DATE ACQ

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SOURCE EVALUATIONS ARE DEFINITIVE. APPRAISAL OF CONTENT IS TENTATIVE.

sketch of the works

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USAF review completed.

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INFORMATION REPORT INFORMATION REPORT

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REPORT

COUNTRY Poland

DATE DISTR. 8 May 1958

SUBJECT The Lenin Steel Works, Nowa Huta

NO. OF PAGES 19

DATE OF INFORMATION

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THIS IS UNEVALUATED INFORMATION

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The Lenin Steel Works, Nowa HutaGeneral Information

1. The Lenin Steel Works (Huta Im. Lenina) was a state-owned enterprise (panstwowe przedsiebiorstwo wyodrebnione, PFW) located northeast of Krakow on the outskirts of the newly built town of Nowa Huta (N 50-06, E 20-03). The plant was a copy of a steel and iron plant in the Soviet Union

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The general construction plan for the Nowa Huta Works used a numerical identification for each building, following the original Soviet plan. The numbers were discontinued and replaced by names as the plant began operation. The purpose of the plant was the production of steel to be used for the industrialization of Poland and for export. The amount of 2,000,000 tons of steel was set as the maximum output for one year. In 1956, with the partial completion of the plant, 1,000,000 tons could have been produced; actual production for 1955 was 800,000 tons. Construction costs between 1950 and December 1955 were approximately 3,500,000,000 zlotys. This amount did not include payments for the technical specifications prepared in the Soviet Union for the machinery and equipment used in the completed plant or for special bricks manufactured in a special plant located in the Nowa Huta area which was subordinate to the Ministry of Metallurgy.

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History of the Plant

2. The Polish Government decided in 1947 to construct a steel plant in the course of the industrialization of Poland. It turned over the project to the Ministry of Metallurgy. In 1948, the present location of the steel plant was chosen by Soviet and Polish experts based on the following points:
- a. Proximity of rich coal deposits in Silesia.
 - b. Proximity of the main railroad line connecting the ore deposits in the Soviet Union with the coal deposits in Poland.
 - c. Water supply from the Vistula River running three kilometers south of the plant.

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- d. Industrialization of the Krakow area for political reasons. This area was a center of opposition to the Communist regime, being populated by farmers. By moving industrial labor forces to this area and by employing local farmers in the construction and production of the steel plant, pro-government forces were expected to become entrenched.
3. At the end of 1949, the geographical survey was completed, new railroad lines and roads were constructed and the existing electrical power system was extended to the construction site. Early in 1949 the Ministry of Metallurgy, as the government agency charged with the construction and called the "Central Investor", initially created two organizations in connection with constructing the steel plant:
 - a. The Central Nowa Huta Association (later renamed Lenin Steel Works Nowa Huta) which was subordinate to the Central Administration of the Metallurgical Industry (Centralny Zarząd Przemysłu Hutniczego, CZPH) in Katowice, which in turn was supervised by the Ministry of Metallurgy. This association was responsible for coordination with the Soviets regarding the furnishing of technical specifications, including machinery and equipment, for the completed plant.
 - b. The Directorate for the Administration of Nowa Huta.
 4. Planning showed, however, that this project was so great and its proper construction of such importance that the Ministry of Metallurgy decided late in 1949 to establish a new organization for the construction of the steel plant. This organization was the Industrial Association for the Construction of the Lenin Steel Works (Zjednoczenie Przemysłowe Budowy Huty Lenina, ZPBHL) which was subordinate to the Central Administration of Industrial Construction for the southern part of the country (Centralny Zarząd Budownictwa Przemysłowego Południe, CZBP). This Association was a merger of the existing BETONSTAL Office #6 in Krakow and the Directorate for the Administration of Nowa Huta. BETONSTAL was an enterprise for heavy industry construction; the main office was located in Warsaw. In November 1950, construction was begun. At that time the Polish Government decided that after 1 January 1951 the steel plant would continue to be subordinate to the Ministry of Metallurgy but that the newly created Ministry of Industrial Construction would assume responsibility for constructing the steel plant. The Industrial Construction

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Association (ZPBHL) then became directly subordinate to the Ministry of Industrial Construction. The Ministry of Metallurgy was the government agency, the "Central Investor", which placed the order for the construction with the Ministry of Industrial Construction. The Association (ZPBHL) was in charge of letting subcontracts for all highly specialized work.¹ In November 1951, the first permanent building was completed, the steel structural shop. In early 1953, the first electric furnace was put into operation in the repair shop. In spring 1953, the section for the production of fireproof material began operation. In spring 1954, the electric power station was completed. In May 1954, the first blast furnace was put into operation. In August 1954, the first coke was produced in the coke oven. In November 1954, the first [] furnace was put into operation, followed by the blooming mill in May 1955. []

[] the completion of the plant [] might require another 15 years. In 1957, the Ministry of Metallurgy was merged with the Ministry of Machine Industry to form the Ministry of Heavy Industry.

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Soviet Aid

5. The top Soviet advisor for the construction was Ladinsky (Fnu). Up to 30 Soviet civilian supervisors were billeted in a house reserved for them in the town of Nowa Huta. They supervised planning, construction, assembly of machinery and delivery of Soviet equipment. They also assisted during the first stage of operation by giving technical advice to the Polish engineers who maintained good relationship with the Soviets. No foreign advisors were observed at the plant after 1955.

Water and Power

6. For full production, a daily consumption of 2,000,000 cubic meters of water was needed. It was to be taken from the Vistula River by special pumps, part of it to be purified in the plant. Electric power was supplied from the main Polish power line carrying 110 kilovolts and from the new power plant which was constructed within the steel works area; the output of this plant, 50 megawatts, was to be increased at least another 15 megawatts by the addition of an annex.

Security

7. A unit of the Corps for Internal Security (KBW) numbering 60 officers and men was stationed in the plant from 1950

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until 1955. The Security Department, directly subordinate to the general manager, most likely carried on activities aimed at maintaining a close watch on all personnel in the plant.

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The plant guards were a part of the plant's administrative force. They were armed with rifles and posted at the gates to check passes, either permanent or temporary. Passes were issued either as general permits for access to production departments or as special permits for certain construction sites. Part of the plant was surrounded by a two-meter-high chicken wire fence. To decrease the glare, brick walls were erected around furnace buildings.

Publications

8. The Lenin Steel Works was extensively discussed in the following literature:
 - a. "Huta Lenina", by Aniola (fnu), the first general manager of the plant. It was published by Polgos in 1950 or 1951.
 - b. "Investment and Construction" (Inwestycje i budownictwo), a monthly publication which devoted one issue, probably in 1951, to a discussion of the steel plant.
 - c. "The Six-Year Plan", issued by the Central Committee of the Polish Workers' Party in 1950, which contained detailed information on the construction of the steel plant.

Organization and Personalities

9. The general manager of the plant was engineer Czechowica (fnu); his deputies were the directors of the three main departments of personnel, security and planning within the main office. Nominations for all four positions were made by the Minister of Heavy Industry and approved by the Central Committee of the Workers' Party. Sections within the main office were:
 - a. The assistant to the General Manager had subordinate to him one deputy and two other employees and was responsible for:
 - (1) Arranging visits to the plant and the reception of VIP's.
 - (2) The approval of plant photographs taken in Nowa Huta by the Central Photography Agency (CAF) which had its main office in Warsaw. Approval was made in close cooperation with security officials.

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- b. The Personnel Department carried out political and professional background screening of administrative workers.

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- d. The General Planning Department collected all data on production for future planning. It carried out its activities in several departments, such as departments for supply of raw material, investment, finances, analysis of costs, technological improvements, employment and wages.
- e. The Sales Department, probably established in 1956, cooperated with all government agencies in foreign countries which promoted the sale of Nowa Huta steel, as well as with purchasing agencies within Poland. This Department was either an independent section of the main office or subordinate to the Financial-Administrative Division.

10. The three main divisions subordinate to the main office were:

- a. Investment Division, headed by the Director of Investments, Zbigniew Loreth and his deputy, engineer Adam Kunz. It was responsible for all new investments and all constructions connected with them. This division was not only of great importance during the initial construction of the Nowa Huta steel works, but also in later stages when replacements were needed for obsolete or faulty machinery. Some of the offices were: Designing, Planning, Investment, and Supply. Prior to funding any investment, an application was sent with all specifications to the Ministry of Heavy Industry. The approval of the Ministry repeated all details of the investment project. Based on this approval, the suppliers of technical machines and equipment were contacted. If the items had to be imported, the respective Polish Foreign Trade organization was asked for delivery; if the items were available on the local market, the appropriate manufacturing or distributing enterprise was contacted. Simultaneously, an order was placed for the construction work with the Industrial Association for the Construction of Nowa Huta (ZPBHL). Additional activities were:

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(1) Supervision of the construction process,
(2) arranging for payment through the Investment Bank after the bills for the work were submitted and checked, and (3) the preparation of investment plans and statistics which were forwarded to the Ministry of Heavy Industry, with one copy sent to the Main Statistical Office in Warsaw, Aleja Niepooleglosci.

b. Production Division, headed by the Director of Production, engineer Sojusz (fnu). This Division supervised all production activities of the steel works; its duties were:

- (1) Production planning.
- (2) Direct inspection of production by special inspectors.
- (3) Close cooperation with the Soviets and familiarization with their production processes.
- (4) Testing of any new method obtained from the latest world literature.
- (5) Technological improvements, consisting of introducing new methods of production and improving work safety measures.
- (6) Examination of suggestions made by the various production departments in their reports.
- (7) Collection of statistical data on production, which was summarized in monthly statistical reports and forwarded to the Investment and Financial Divisions.
- (8) Based on the production reports, the Director of Production prepared requests for premium payments in accordance with existing regulations.²

The above duties were carried out in the offices for planning, personnel, production, safety, reports, work improvements and others. The office chiefs were subordinate to the Director of Production, but they had to cooperate with their department heads in all matters dealing with the activities of their offices.

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c. The Financial-Administrative Division had charge of over-all financial and administrative matters and supervised auxiliary departments, such as transportation and guards. This Division consisted of several departments:

- (1). Administrative Department, in charge of administration of the different offices, including allocation of space, office furniture, supplies, telephones, and the administration and supervision of roads within the Nowa Huta plant.
- (2). Transportation Department, in charge of all transportation means, such as trucks, cars, locomotives, freight cars, and gasoline stations.
- (3). Supply Department.
- (4). Bookkeeping Department, using modern office machines.
- (5). Financial Department.
- (6). Employment and Wages Department, which worked closely with the Financial Department. The Employment Department administered employee quotas allotted by the Ministry, hired additional personnel and supervised the employment activities of all departments in Nowa Huta by checking job descriptions with existing pay scales. The General Planning Department in the Main Office worked out personnel planning in cooperation with this Department.

11. A designing office for Nowa Huta steel works was located in Krakow, Oleandry 4. It was in charge of all drawings and was headed by engineer Bazylewicz (fnu).

Coke Production

12. The plant produced its own coke in by-product coke ovens. At the end of 1955, there were two groups of coke ovens, each consisting of two batteries; the construction plan called for three groups. Each battery had 58 ovens. Each group was about 100 meters long. One coal tower served two batteries. Every 20 to 25 minutes a coke oven

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was filled with coal from a hopper car from one side, while at the other side hot coke was pushed out into a car which moved to one of the four quenching towers. Steam was seen rising from the quenching towers almost continuously. The ovens were heated by gas produced in the plant. Each battery had its own control room which operated automatically. Various grades of Polish coal were shipped to the plant by train and were mixed in the Coal Sorting Department (oddzial dozowania).

no shortage of coal. Coke produced in the plant was used in the blast furnaces; a small part was shipped out. The plant paid 60 zlotys for one ton of coal.

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Ore Preparation

13. About 95 percent of the plant's iron ore was imported from Krivoy Rog, USSR (N 47-54, E 33-21); the rest came from [redacted]. The ore reserves were often very small. The Soviet ore was red and pulverized and therefore no machinery for crushing, screening or washing was used. Because of the high air pressure in the blast furnaces, the pulverized ore had to be formed into coke-type pieces in the Agglomeration Department. The ore which was thus prepared was moved either to the ore yard which was surmounted by large traveling cranes, or it was shipped directly to the loading site of ore, limestone and coke. An extensive bin system was used to receive and to store these materials. From the bins the raw materials were taken by scale cars and discharged into skip cars running on a double skip hoist to the top of the blast furnaces. Here they were discharged into a rotating small bell mounted above the furnace and then through a large bell directly into the furnace. During the cold winter months, the railroad cars carrying ore from the Soviet Union had to be defrosted before the frozen pulverized ore could be removed. This was done in a large heated hall. At other times, the cars moved directly to the Agglomeration Department.

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Pig Iron Production

14. The plant had three blast furnaces. Two had a capacity of 1,000 cubic meters and were constructed on a foundation which required 4,000 cubic meters of concrete. The third had a capacity of 1,300 cubic meters and was constructed on a heavier foundation. The height of each furnace was 70 meters, the diameter at the ore dumping opening was five meters. In one hour a total of 160,000 cubic meters

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of hot air was blown into the furnaces from turbo-blowers. Each of the smaller furnaces produced 400 tons of pig iron in six hours or 1,600 tons in 24 hours; the third furnace was scheduled to produce about one-third more. The pigs were cast in sand molds as well as in casting machines. The proportion of molten iron taken directly to the steel plant and that which was cast into pigs was unknown.

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For the two blast furnaces in operation, ore and lime were moved from the stockpiles to the bins by two bridge cranes; a third bridge crane for the furnace under construction was to be built at a later date. Three overhead conveyers carried the coke from the coke plant to the blast furnaces.

Steel Production

15. The Steel Production Department consisted of three tilted furnaces of 370 ton capacity each and of five stationary furnaces with a 185 ton capacity each. The construction plan called for a total of eleven furnaces. All were housed in one shop called the Main Shop for Steel Production; it measured 100 x 30 x 20 meters. The three smokestacks for the larger furnaces were higher than the five for the smaller furnaces. converters were not used. Every large furnace had four open hearth furnaces. Electric furnaces were used only in the Repair Department. The open hearth furnaces were filled with molten pig iron and cold pigs, the latter in a smaller quantity. For two furnaces, molten pig iron came directly from the blast furnace; for the others, it was sent first to one of the two pig iron mixer drums. Scrap was also used for the furnaces but the percentage was not fixed. Each tapping occurred after 14 hours when 25 ingots of five tons each were poured; reportedly, there were also 15-ton ingots. In 1955, all steel was poured into ingots which were moved to the stripping shop where the molds were stripped from the ingots, taken to the heating furnaces and to the rolling mills. Four Soviet-made traveling cranes of unknown capacity were used for loading the furnaces. In 1955, two of the overhead traveling cranes for carrying the steel containers from the furnaces to the rail cars were made; they had a capacity of 270 tons each. During the testing of these cranes, they carried 320 tons. Other overhead cranes had a smaller capacity. High quality steel was not produced.

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Rolled Products, Forgings, Castings

16. The ingots moved from the Stripping Department to the rolling mills were first heated in five soaking pits. In the blooming mills were stands for rolling, mainly billets and slabs. The width of the rollers was 158 centimeters; the maximum width for any rolled sheet was 150 centimeters. The theoretical capacity of the rolling mills was 800,000 to 1,000,000 tons per year depending on the type of material and the skill of workers. Actual output was 600,000 to 800,000 tons. Pipes or wire were not produced. Forgings were produced, including very large ones, and shipped out from the plant. Castings in the foundry, which operated by electric furnaces, were poured into sand or metal molds. These castings were used for equipment in the Nowa Huta plant. Iron and steel were used for the castings; no iron pipes were cast.

Quality and Testing of Steel

17. The Nowa Huta Works was closely connected with Polish industrialization; as this industrialization program bogged down beginning in 1952, the need for steel dropped and the assortment became poor. Nowa Huta steel could not compete with Western steel products, particularly because the steel sheets were narrower than the [] standard sheets of 180-185 centimeters. Metallurgical and chemical controls were necessary at every step of steel production to maintain the proper temper and softness and to clear it for further processing. For this work, experienced men were lacking, particularly in supervisory capacities, resulting in a large quantity of faulty steel. Steel testing took place in a laboratory with six employees located in the steel mill. The production setup was in good order and was never the reason for faulty production. Total loss of steel, that which had to be returned to the furnaces, averaged 2,000 tons per week. The steel was also regularly tested at the Academy of Mining and Metallurgy (Akademia Gorniczo-Hutnicza) in Krakow.

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Overlay

18. Figure 1 on page 19 is an overlay of sheet [] Poland, [] scale 1:100,000. Figures in parentheses below refer to figures on the overlay.

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- (1) Rail Line - running from Krakow to Warsaw.
- (2) Single Rail Line - running from Krakow-Grzegorzki to Kocmyrzow; a spur led to Nowa Huta.
- (3) Rail Line - running from Batowice to the steel works; constructed in 1954, several spurs ran through the plant area.
- (4) Junction - of the rail line, Point (2), and the main road, Point (11).
- (5) Site of the Lenin Steel Works.
- (6) New road - the main road connecting the plant with the town of Nowa Huta; it was 20 meters wide, cobblestone, with a center strip for streetcar lines.
- (7) Road - seven meters wide, cobblestone, running from Krakow to Brzesko Nowe.
- (8) Water Pump Station - water was brought from the Vistula River to the plant.
- (9) Vistula River.
- (10) Town of Nowa Huta - still under construction; it was to have a population of 100,000.
- (11) Road - with two streetcar lanes; it ran from Krakow to Nowa Huta.
- (12) City of Krakow.
- (13) New Highway - 10 meters wide, asphalt and cobblestone. It connected the Krakow-Katowice highway with the plant.
- (14) Rakowice Airfield - no information.

Site Layout

19. Inclosure 1 is a  sketch of a site layout of the Nowa Huta Plant. Numbers in parentheses below refer to numbers on the inclosure.

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- (1) Exhibition Building - a one-story, brick building in which were displayed safety measures and directives to be complied with during the construction and eventual assembly work in the plant.

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- (2) Motor Pool of the Road Transports Management (zarzad transportu drogowego) - an area with administrative offices, garages, gasoline storage, gasoline pumps, and repair shops for vehicles belonging to the Industrial Association for Construction of Nowa Huta. The area was inclosed by a chicken wire fence; guards checked all passes.
- (3) Open Storage Area - for steel structural sections and overhead traveling cranes.
- (4) Prefabrication of Concrete Items - bricks and "DMS" beams for the plant's construction were prefabricated in outdoor shops; finished material was stored in wooden sheds.
- (5) Vacant Area.
- (6) Steam Locomotive Terminal - a temporary brick building measuring 20 x 8 x 8 meters. There were four railroad sidings.
- (7) Gasoline Station - two gasoline pumps with underground tanks and a small administration building.
- (8) Open Storage Area - for steel beams and machine parts; no railroad mounted cranes were in use.
- (9) Office Building of the Subcontractors - several one-story prefabricated houses.
- (10) Internal Security Building - a total of 60 officers and enlisted men were assigned to this unit which was probably abolished in 1956.
- (11) Main Office Building of the Association - a two-story brick building 60 meters long.
- (12) Main Snack Bar.
- (13) Wooden Building - 60 meters long, housing offices of the Association.
- (14) Office of MOSTOSTAL - one of the subcontractors.
- (15) Concrete Manufacturing Plant - also called "Central Supply Point of Concrete", consisting of two brick buildings, each measuring 15 x 7 x 10 meters; the concrete was used in the construction of the plant.

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- (16) Storage Area of MOSTROSTAL- machines and overhead traveling cranes were stored here.
- (17) Temporary Boiler House - a brick building measuring 30 x 10 x 8 meters.
- (18) Office Building - used by the supply management of the Association.
- (19) Workshops - wooden buildings, for repair of construction equipment.
- (20) Administration Building - a permanent two-story, brick building.
- (21) Repair Shops - for subcontractors.
- (22) Area of Completed Construction - all buildings in this area were permanent. They were administration and dispatch office buildings, two garages, workshops, a square-shaped fire house with a 15-meter-high concrete tower in front.
- (23) Office Building - a wooden building where entrance permits were issued.
- (24) Streetcar Line - running from Krakow to the plant and terminating at the side entrance near the Rolling Mill Department, Point (48).
- (25) Guard Billets - a one-story brick building with barred window. A guard was on 24-hour duty. Small arms were stored here.
- (26) Main Office Building - this permanent three-story, brick building housed the headquarters office of the Nowa Huta plant; marble was used for the interior decoration.
- (27) Main Gate - uniformed guards were on 24-hour duty.
- (28) Repair Shop - a permanent brick building measuring 17 x 25 x 15 meters; it was used for repair of all electrical equipment of the plant.
- (29) Steel Foundry - a building of 70,000 cubic meters; castings were made here.
- (30) Iron Foundry - a building of 70,000 cubic meters.

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- (31) Oxygen Plant - as the oxygen produced here was not sufficient, negotiations with Western countries began in 1957 to purchase equipment for a new oxygen plant.
- (32) Storage Area - with three overhead traveling cranes; it belonged to repair departments.
- (33) Iron Shaping Shop - a brick building measuring 10 x 10 x 5 meters where casting forms were made.
- (34) Air Compressor Shop - a brick building measuring 10 x 10 x 5 meters with four air compressors in use.
- (35) A railroad steam locomotive terminal - with six tracks, belonging to the Industrial Administration for construction of Nowa Huta.
- (36) Forging Shop - several pneumatic hammers were in use; it was a part of the repair departments.
- (37) Carpenter Shop.
- (38) Stripping Shop - a brick building measuring 20 x 50 x 50 meters with overhead traveling cranes.
- (39) Structural Steel Shop - a brick building of 60,000 cubic meters.
- (40) Building - with five chimneys, each 50 meters high; soaking pits heated the ingots coming from the stripping shop.
- (41) Rolling Mills - the blooming mill was 45 meters long, the entire building 200 meters long.
- (42) Hot Rolling Mills - a concrete construction measuring 150 x 40 x 25 meters.
- (43) Cold Rolling Mills - a concrete construction measuring 150 x 40 x 25 meters. The final plan for Nowa Huta called for rolling mills 900 meters long, location unknown.
- (44) Turbo Blower Building - measuring 50 x 25 x 20 meters.
- (45) Office Building for the Power Station.
- (46) Coal Storage Yard.

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- (47) Power Station - with two turbo sets, each producing 25 megawatts. A third turbine of 15 megawatts was under construction. The chimney was 105 meters high.
- (48) Main Transformer Station - transforming power from the main power system of 110 kilovolts to six kilovolts.
- (49) Water Purification Plant.
- (50) Area - reserved for expansion of the power plant.
- (51) Three Blast Furnaces - 70 meters high.
- (52) Three Sets of Electro Filters - used to purify gas from the blast furnaces.
- (53) Water Purifiers - called purifiers. 25X1
- (54) Office Buildings - for the Blast Furnace Department.
- (55) Ore, Coke, and Limestone Silos.
- (56) Stockpiles - for ore and limestone.
- (57) Agglomeration Department - measuring 30 x 15 x 15 meters.
- (58) Defrosting Department (odmrazalnia wagonow).
- (59) Coal Unloading Point (Wyrotnica Wagonowa) - coal was unloaded from railroad cars into underground coal dumps.
- (60) Coal Conveyers - carrying coal from underground dumps.
- (61) Coal Crushing Building.
- (62) Coal Sorting Department (oddzial dozowania) - with large concrete containers for various types of coal.
- (63) Spraying Point - water was sprayed on the coal mixture to avoid dust formation.
- (64) Four Coke Oven Batteries - the adjacent vacant area to the south was large enough for the construction of two more batteries as set forth in the original construction plan.

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- (65) Four Quenching Towers.
- (66) Four Chimneys - each 90 meters high.
- (67) Coke Bunkers - coke was moved from here to the coke yard by three conveyors.
- (68) Four Cooling Towers - coke gas circulating in pipes was cooled here before it reached the Chemical Department, where it was cooled again and purified.
- (69) Area of the Chemical Department - under construction in 1957. It was an identical copy of a Soviet chemical plant. By-products of coke production were naphtalene, phenol, and ammonia.
the chemical plant would have the following three departments: (1) Ammonia Department (amoniakalnia), (2) Rectifier Plant for Benzol (oddzial rektyfikacji benzolu), and (3) Rectifier Department for Tar (oddzial rektyfikacji smoly).
- (70) Coal Storage.
- (71) Side Entrance - with two brick guardhouses.
- (72) Production Area - for fireproof bricks used in ovens and furnaces; some quantities were shipped outside. Special types of fireproof bricks were imported from Austria and the Soviet Union. This production consisted of three departments: (a) Fireproof brick (wydzial szamotowy), (b) pressed brick (wydzial dynasowy), and (c) silicates (wydzial krzemionkowy).
- (73) Office Building - housing the Department for Production of Fireproof Material.
- (74) Brick Kilns - 150 meters long with several chimneys along the walls.
- (75) Auxiliary Shops - belonging to the Department for Production of Fireproof Bricks. Consisting of four brick buildings, each measured 20 x 15 x 12 meters.
- (76) Office Building - a two-story brick building measuring 20 x 10 meters.

25X1
25X1

C-O-N-F-I-D-E-N-T-I-A-L


C-O-N-F-I-D-E-N-T-I-A-L

-18-



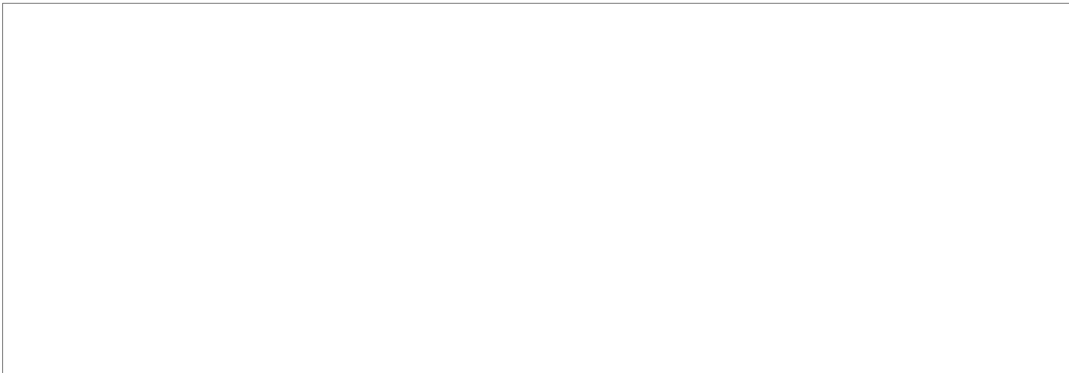
25X1

(77) Mixer Building - measuring 20 x 15 x 15 meters,
with two large pig iron mixers.

(78) Steel Production Department - measuring 150 x 30 x
25 meters, the three large  furnaces measured
7 x 8 meters, the five smaller ones measured 4 x 5
meters; all furnaces were about five meters high.

25X1

(79) Slag Area - for dumping slag (zwalka) and preparing
it for cement production.

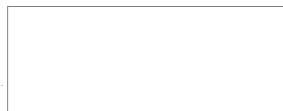


25X1


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C-O-N-F-I-D-E-N-T-I-A-L

-19-



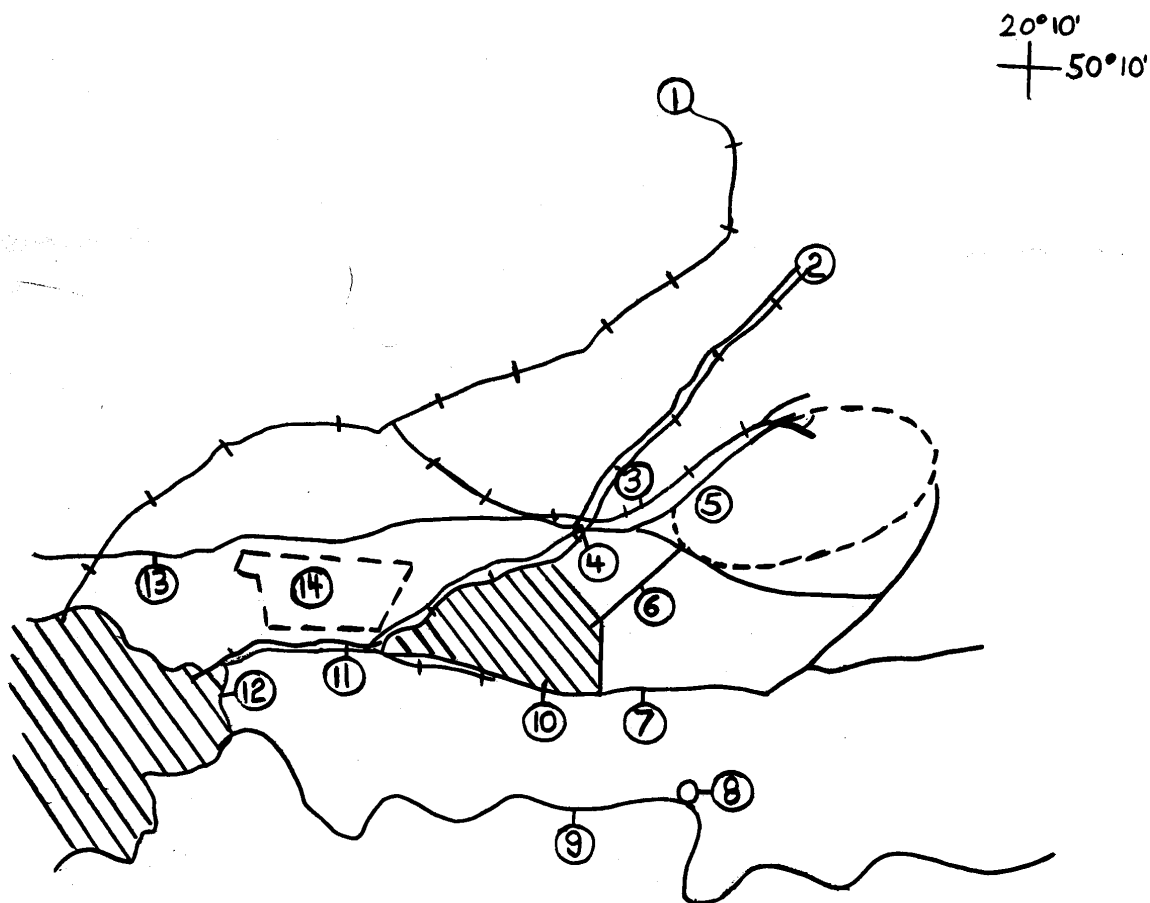
25X1

Figure 1 : Overlay sheet  Krakow,
Poland 1:100,000

25X1



25X1



C-O-N-F-I-D-E-N-T-I-A-L

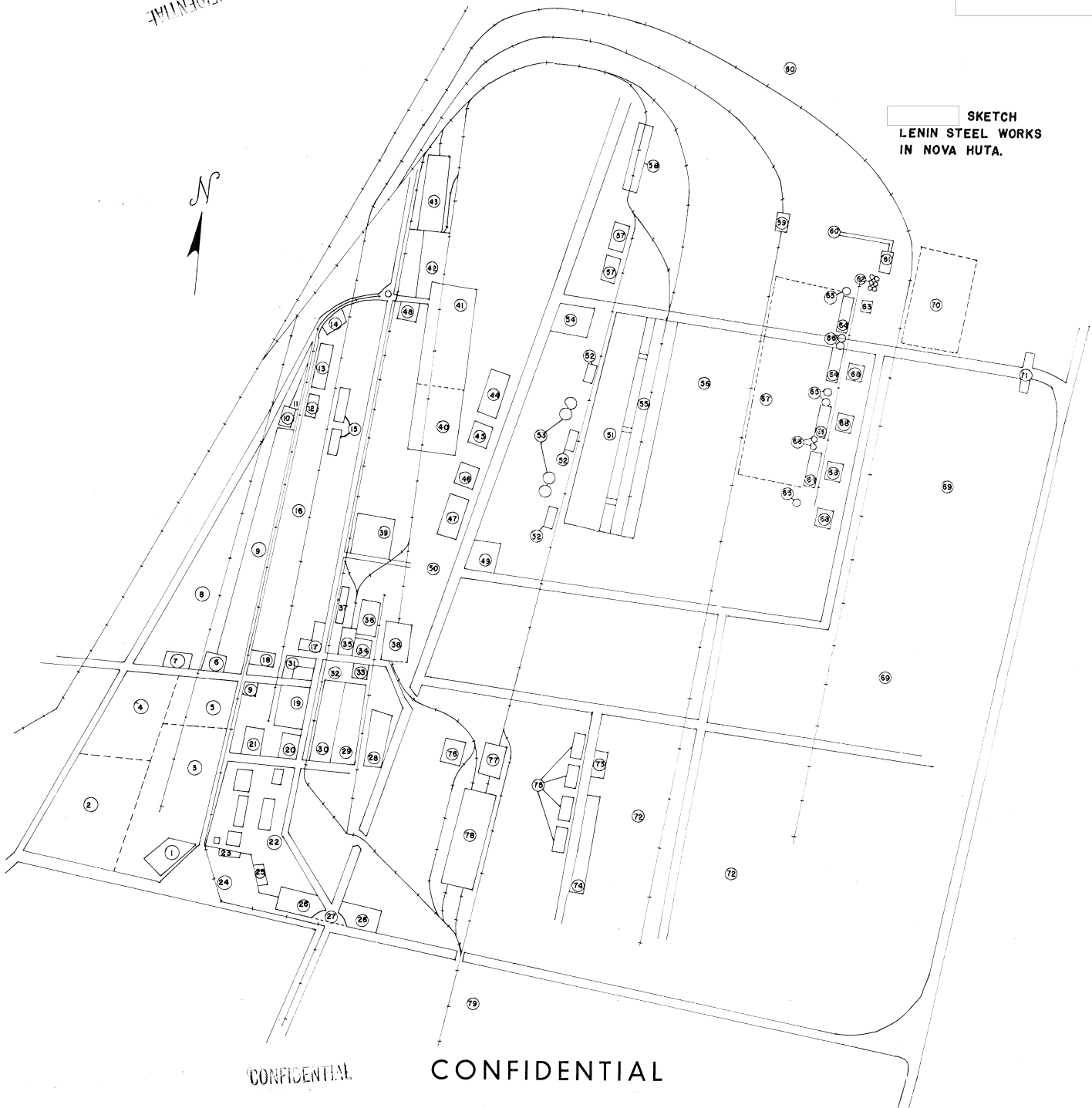
CONFIDENTIAL

CONFIDENTIAL

25X1

SKETCH
LENIN STEEL WORKS
IN NOVA HUTA.

25X1



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